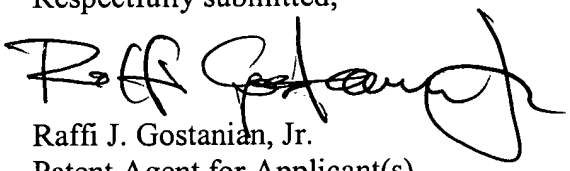
REMARKS

Attached hereto is a marked-up version of the changes made to the specification and the claims by the current amendment. The attached page is captioned **"VERSION WITH MARKINGS TO SHOW CHANGES MADE."**

Enclosed is a check in the amount of $1,158.00 to cover the additional claims (13 additional claims X $18.00 = $234.00 plus 11 independent claims - only 2 independent claims were initially filed - X $84.00 = $924.00). The Assistant Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-1752.

A prompt examination and allowance is respectfully solicited. If there are any additional questions, please contact me at your earliest convenience.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

(1.) The following changes were made to paragraph 4, page 1:

[0004] On desktop computers, it is common practice to play MPEG-1 video and audio using a commercially available software package, such as, by way of example, the Microsoft Windows Media Player. This software program may be run as a standalone application. Otherwise, components of the player may be embedded within other software applications. [ ] Media Player, like MPEG-1 itself, is inherently file-oriented and does not support playback of continuous sources such as cameras via a network. Before Media Player begins to play back a received video file, it must first be informed of certain parameters including file name and file length. This is incompatible with the concept of a continuous streaming source, which may not have a filename and which has no definable file length. Moreover, the time stamping mechanism used by Media Player is fundamentally incompatible with the time stamping scheme standardized by the MPEG-1 standard. MPEG-1 calls out a time stamping mechanism which is based on a continuously incrementing 94 kHz clock located within the encoder. Further, the MPEG-1 standard assumes no Beginning-of-File marker, since it is intended to produce a continuous stream.

(2.) The following changes were made to paragraph 6, page 2:

[0006] The subject invention is directed to a streaming video system for capturing, encoding and transmitting continuous video from a camera to a display monitor via a network that includes an encoder for receiving a video signal from the camera, the encoder producing a high-resolution output signal and a low-resolution output signal representing the video signal, a router or switch for receiving both the high-resolution output signal and the low-resolution output signal and a display monitor in communication with the router for selectively displaying either the high-resolution output signal or the low-resolution output signal. It will be understood by those skilled in the art that the terms "router and/or switch" as used herein is intended as a generic term for receiving and rerouting a plurality of signals. Hubs, switched hubs and intelligent routers are all included in the terms "router and/or switch" as used herein.

(3.) The following changes were made to paragraph 8, page 2:

[0008] The system [of] includes a selector for selecting between the high-resolution output signal and the low-resolution output signal based on the dimensional size of the display. The selector may be adapted for manually selecting between the high-resolution output signal and the low-resolution output signal. Alternatively, a control device may be employed for automatically selecting between the high-resolution output signal and the low-resolution output signal based on the size of the display. In one aspect of the invention, the control device may be adapted to assign a priority to an event captured at a camera and selecting between the high-resolution output signal and the low-resolution output signal based on the priority of the event.

(4.) The following changes were made to paragraph 10, page 3:

[0010] The video system of the subject invention is adapted for supporting the use of a local-area-network (LAN) or wide-area-network (WAN), or a combination thereof, for distributing digitized camera video on a real-time or "near" real-time basis.[ ]
In the preferred embodiment of the invention, the system uses a plurality of video cameras, disposed around a facility to view scenes of interest. Each camera captures the desired scene, digitizes (and encodes) the resulting video signal, compresses the digitized video signal, and sends the resulting compressed digital video stream to a multicast address. One or more display stations may thereupon view the captured video via the intervening network. [ ]
Streaming video produced by the various encoders is transported over a generic IP network to one or more users. User workstations contain one or more ordinary PC's, each with an associated video monitor. The user interface is provided by an HTML application within an industry-standard browser, for example Microsoft Internet Explorer.

(5.) The following changes were made to paragraph 16, page 4:

[0016] Edit various operating parameters of the encoders. This is done by pointing to the desired camera, then right-clicking the mouse. The user interface then drops a dynamically-generated menu list which allows the user to adjust the desired encoder parameters.

(6.) The following changes were made to paragraph 22, page 5:

[0022] However, when the user subdivides a video display area into a 3 x 3 array, the demand on network bandwidth is 9 times higher than in the single-display example. And when the user subdivides the video display area into a 4 x 4 array, the network bandwidth requirement is 16 times that of a single display. To prevent network congestion, video images in a 3 x 3 or 4 x 4 array are obtained from the low-resolution, low-speed stream of the desired encoder. Ultimately, no image resolution is lost in these cases, since the actual displayed video size decreases as the screen [if] is subdivided. That is, if a higher-resolution image were sent by the encoder, the image would be decimated anyway in order to fit it within the available screen area. [ ]
It is therefore, an object and feature of the subject invention to provide the means and method for displaying "live" streaming video over a commercially available media player system. It is a further object and feature of the subject invention to provide the means and method for permitting multiple users to access and view the live streaming video at different time, while in process without interrupting the transmission.

(7.) The following changes were made to paragraph 30, page 6:

[0030] The preferred digital encoders E1, E2...En produce industry-standard MPEG-1 digital video streams. The use of MPEG-1 streams is advantageous due to the low cost of the encoder hardware, and to the ubiquity of software MPEG-1 players. However, difficulties arise from the fact that the MPEG-1 format was designed primarily to support playback of recorded video from a video CD, rather than to support streaming of "live" sources such as cameras. [ ]
MPEG-1 system streams contain multiplexed elementary bit streams containing compressed video and audio. Since the retrieval of video and audio data from the storage medium (or network) tends to be temporally discontinuous, it is necessary to embed certain timing information in the respective video and audio elementary streams. In the MPEG-1 standard, these consist of Presentation Timestamps (PTS) and, optionally, Decoding Timestamps (DTS). On desktop computers, it is common practice to play MPEG-1 video and audio using a proprietary software package such as, by way of example, the Microsoft Windows Media Player. This software program may be run as a standalone application, otherwise components of the player may be embedded within other software applications.

(8.) The following changes were made to paragraph 33, page 7:

[0033] When invoking Media Player to view the streaming camera video, it is first necessary to inform Media Player of the file length. Since the camera produces a stream rather than a discrete file, the file length is undefined. In order to overcome this problem all of the Media Player's 63-bit file length variables are set to 1. Media Player compares this value to a free-running counter that counts ticks of a 10 MHz clock. This counter is normally initialized to zero at the beginning of the file. Given 63 bits, this permits a maximum file length of approximately thirty thousand years, longer than the useful life of the product or, presumably, it[']s users. This effectively allows the system to play streaming sources.

(9.) The following changes were made to paragraph 36, page 8:

[0036] Any given source of encoded video may be viewed by more than one client. This could hypothetically be accomplished by sending each recipient a unique copy of the video stream. However, this approach is tremendously wasteful of network bandwidth. A superior approach is to transmit one copy of the stream to multiple recipients, via Multicast Routing. This approach is commonly used on the Internet, and is the subject of various Internet Standards (RFC's). In essence, a video source sends its[’] video stream to a Multicast Group Address, which exists as a port on a Multicast-Enabled network router or switch. The router or switch then forwards the stream only to IP addresses, which have known recipients. Furthermore, if the router or switch can determine that multiple recipients are located on one specific network path or path segment, the router or switch sends only one copy of the stream to that path.

(10.) The following changes were made to paragraph 45, page 10:

[0045] The system [of] includes a selector for selecting between the high-resolution output signal and the low-resolution output signal based on the dimensional size of the display. The selector may be adapted for manually selecting between the high-resolution output signal and the low-resolution output signal. Alternatively, a control device may be employed for automatically selecting between the high-resolution output signal and the low-resolution output signal based on the size of the display. In one aspect of the invention, the control device may be adapted to assign a priority to an event captured at a camera and selecting between the high-resolution output signal and the low-resolution output signal based on the priority of the event.

(11.) The following changes were made to paragraph 51, page 12:

[0051] Referring now to Fig. 4, [W]when the user has configured the video display area to display a single image, that image is obtained from the desired encoder using the higher-resolution, higher-bit rate stream. The same is true when the user subdivides the video display area into a 2 x 2 array; the selected images are obtained from the high-resolution, high-bit rate streams from the selected encoders. The network bandwidth requirements for the 2 x 2 display array are four times the bandwidth requirements for the single image, but this is still an acceptably small usage of the network bandwidth.

In the Claims:

Claim 1 has been amended as follows:

1. A system for capturing, encoding and transmitting continuous video from a camera to a display monitor via a network, comprising:

a. An encoder for receiving a video signal from the camera, the encoder producing a high-resolution output signal and a low-resolution output signal representing the video signal;

b. A switching network for receiving both the high-resolution output signal and the low-resolution output signal; and

c. A display monitor [for] in communication with the [router] switching network for selectively displaying one of said high-resolution output signal and said low-resolution output signal.

Claim 9 has been amended as follows:

9. The system of claim 5, wherein there is further included a plurality of cameras and an encoder associated with each of said cameras, the high-resolution output signal and low-resolution output signal unique to each camera being transmitted to the [router]

switching network, and wherein the display monitor is adapted for displaying any combination of camera signals.

Claim 11 has been amended as follows:

11. The system of claim 1, wherein there is further included a plurality of display monitors, each of which is in communication with the [router] switching network, whereby each display monitor may selectively display the high-resolution signal and the low-resolution signal.

Claim 12 has been amended as follows:

12. The system of claim 11, wherein there is further included a plurality of cameras and an encoder associated with each of said cameras, the high-resolution output signal and low-resolution output signal unique to each camera being transmitted to the [router] switching network, and wherein there is further included a management system associated with each display monitor whereby each of the plurality of display monitors is adapted for displaying any combination of camera signals independently of the other of said plurality of display monitors.

Claim 15 has been amended as follows:

15. The system of claim 1, wherein the communications link between the [router] switching network and the display monitor is a network.

Claim 25 has been amended as follows:

25. The system of claim 1, further including a compressor between the encoder and the [router] switching network.

Claims 26-38, which contain no new matter, were added:

26. (new) A system, comprising:

an encoder adapted to receive video and encode a high-resolution output signal and a low-resolution output signal representing the video; and

a display monitor adapted to selectively display at least one of the encoded high-resolution output signal and the encoded low-resolution output signal.

27. (new) A system, comprising:

a camera adapted to output continuous video;

an encoder adapted to receive the video and encode a high-resolution output signal and a low-resolution output signal representing the video; and

a display monitor adapted to selectively display at least one of the encoded high-resolution output signal and the encoded low-resolution output signal.

28. (new) A system, comprising:

a camera adapted to output continuous video;

an encoder adapted to receive the video and encode a high-resolution output signal and a low-resolution output signal representing the video; and

a display monitor adapted to display at least one of the encoded high-resolution output signal and the encoded low-resolution output signal based on a dimensional size of the display.

29. (new) A system, comprising:

a camera adapted to output continuous video;

a control device adapted to assign a priority to the video;

an encoder adapted to receive the prioritized video and encode at least one of a high-resolution output signal and a low-resolution output signal representing the video based on the priority; and

a display monitor adapted to display the prioritized signal.

30. (new) A system, comprising:

a plurality of cameras adapted to output continuous video;

an encoder, associated with each of the cameras, adapted to receive the video and encode at least one of a high-resolution output signal and a low-resolution output signal representing the video; and

a display monitor adapted to selectively display any combination of the encoded signals.

31. (new) A system, comprising:

a plurality of cameras adapted to output continuous video;

an encoder, associated with each of the cameras, adapted to receive the video and encode at least one of a high-resolution output signal and a low-resolution output signal representing the video; and

a display monitor adapted to selectively display the encoded signals based on a number of signals simultaneously displayed at the monitor.

32. (new) A system, comprising:

a plurality of cameras adapted to output continuous video;

an encoder, associated with each of the cameras, adapted to receive the video and encode at least one of a high-resolution output signal and a low-resolution output signal representing the video; and

a plurality of display monitors adapted to selectively and independently display any combination of the encoded signals.

33. (new) A method for displaying live continuous video, comprising:

encoding video into a low-resolution low-bit rate stream and a higher-resolution higher-bit rate stream; and

performing at least one of a following action:

displaying a single image of the video using the higher-resolution higher-bit rate stream;

displaying a 2 x 2 array of the video using the higher-resolution higher-bit rate stream;

displaying a 3 x 3 array of the video using the low-resolution low-bit rate stream; and

displaying a 4 x 4 array of the video using the low-resolution low-bit rate stream.

34. (new) A method for connecting to a live continuous video stream originating from a network, comprising:

formulating a dummy video file header;

sending the header to a video player;

examining data sent to the video player; and

if the header is found, passing the networked video stream to the video player.

35. (new) A method for connecting to a live continuous video stream originating from a network, comprising:

formulating a dummy video and audio file header;

sending the header to a video and audio player;

examining data sent to the video and audio player; and

if the header is found, passing the networked video stream to the video and audio player.

36. (new) A method for receiving a live continuous video stream at a media player, originating from a network, after a start of the video stream, comprising:

receiving a non-zero timestamp;

replacing the non-zero timestamp with a value comprising a current timestamp minus the non-zero timestamp; and

receiving the value timestamp.

37. (new) A method for receiving a live continuous video stream at a media player, originating from a network, after a start of the video stream, comprising:

receiving a non-zero timestamp; and

renumbering the non-zero timestamp with a value comprising a current timestamp minus the non-zero timestamp, wherein the renumbering causes the video stream to be sent to the media player at the renumbered timestamp.

38. (new) A method for establishing a multicast connection, comprising:

requesting, by a client, an IP address of a desired encoder;

providing, by a server, the IP address of the desired encoder;

using the IP address of the desired encoder, requesting, by the client, a file containing a multicast address;

receiving, from the encoder, the file containing the multicast address; and

connecting, by the client, to the multicast address.

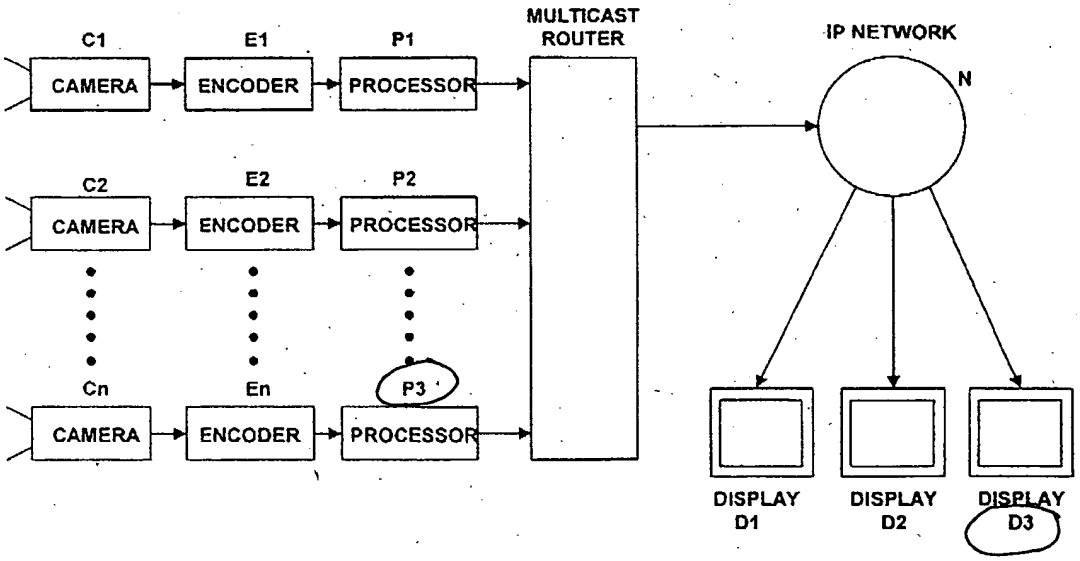

FIG.1 MULTIPLE VIDEO ENCODERS

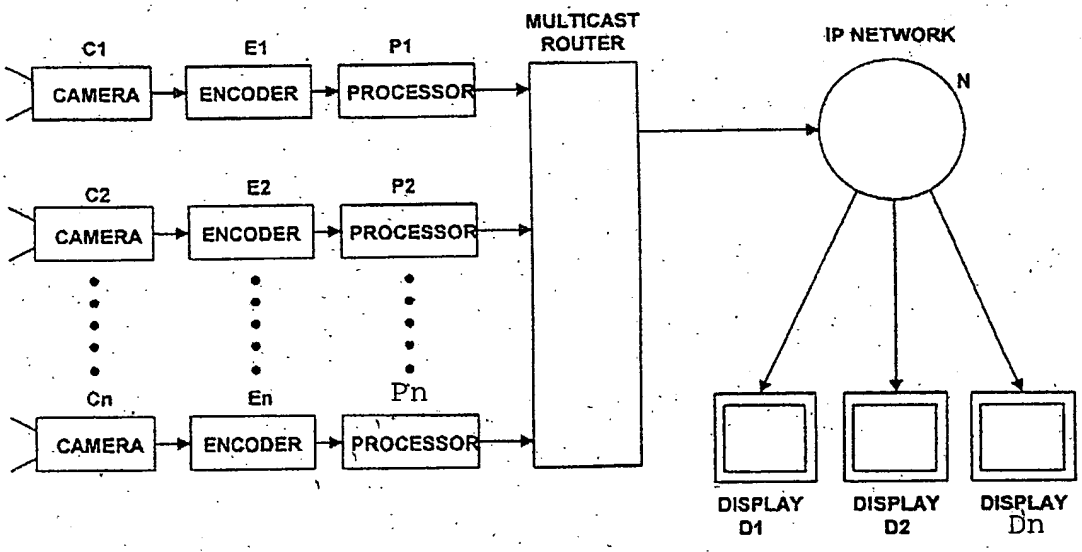

FIG.1 MULTIPLE VIDEO ENCODERS